

# Pilot study on the prevalence of abuse and mistreatment during clinical internship: a cross-sectional study among first year residents in Oman

Mohammed Al-Shafae,<sup>1</sup> Yousuf Al-Kaabi,<sup>1</sup> Yousuf Al-Farsi,<sup>1</sup> Gillian White,<sup>2</sup> Abdullah Al-Maniri,<sup>1</sup> Hamed Al-Sinawi,<sup>2</sup> Samir Al-Adawi<sup>3</sup>

**To cite:** Al-Shafae M, Al-Kaabi Y, Al-Farsi Y, *et al*. Pilot study on the prevalence of abuse and mistreatment during clinical internship: a cross-sectional study among first year residents in Oman. *BMJ Open* 2013;**3**:e002076. doi:10.1136/bmjopen-2012-002076

► Prepublication history for this paper are available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2012-002076>).

Received 9 September 2012  
Revised 29 December 2012  
Accepted 11 January 2013

This final article is available for use under the terms of the Creative Commons Attribution Non-Commercial 2.0 Licence; see <http://bmjopen.bmj.com>

<sup>1</sup>Department of Family Medicine and Public Health, College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman

<sup>2</sup>Directorate of Education and Training, Ministry of Health, Muscat, Oman

<sup>3</sup>Department of Behavioural Medicine, College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman

## Correspondence to

Dr Samir Al-Adawi;  
[samir-al-adawi@fulbrightmail.org](mailto:samir-al-adawi@fulbrightmail.org)

## ABSTRACT

**Objective:** To evaluate perceptions of being mistreated during internship among first year Oman Medical Specialty Board residents.

**Design:** A cross-sectional study.

**Setting:** Training centres for Oman Medical Specialty Board.

**Participants:** First year medical residents following completion of internship during the study period 2009–2010.

**Method:** A cross-sectional survey of first year medical residents.

**Results:** Of 58 residents (response rate 84%), 96.6% perceived that mistreatment exists. Among different types of mistreatment reported, verbal and academic abuses were the most common (87.9%), followed by sexual harassment (24.1%), then physical abuse (22.4%). Forty-four (75.9%) residents had advised at least one of their relatives not to join medical school.

**Conclusions:** Mistreatment of medical interns is an ethical issue challenging the quality of clinical training. Further research is needed to understand factors influencing mistreatment and to draw guidelines to limit such problems.

## INTRODUCTION

Forms of abuse and other bullying behaviours have been reported in various occupational settings.<sup>1–4</sup> Studies carried out in different parts of the world suggest that the medical profession is no exception to the experience of maltreatment within institutional settings. Among various medical professionals who have reported abuse, those who are in the early phase of their careers, such as interns, are the most vulnerable. According to Coverdale *et al*, the most common degrading experiences for interns were 'threats, intimidation, humiliation, excessive criticism, covert innuendo, exclusion or denial of access to opportunity,

## ARTICLE SUMMARY

### Article focus

- To understand factors influencing mistreatment and to draw guidelines to limit such problems.
- To report the perceived experiences of mistreatment among medical trainees in Oman, an Arab/Islamic country.

### Key message

- The data suggest medical trainees in Oman perceived bullying behaviour as common.

### Strengths and limitations of this study

- Bullying behaviours have been reported in different occupational settings including the medical profession. There is a dearth of studies from Arab/Islamic countries.
- To our knowledge, this is the first study on the subject from this part of the world.
- This study is limited by the small sample size and cross-sectional study method.

undue additions to work requirements and shifting of responsibilities without appropriate notice' (ref. <sup>5</sup>, p.269).

Several studies have quantified mistreatment among medical trainees or those on the lower ladder of a medical career. Daugherty *et al*<sup>6</sup> reported in a national survey in the USA that about 93% of medical trainees had experienced at least one episode of mistreatment. Another survey undertaken in the UK<sup>7</sup> reported that around 84% of medical trainees had been bullied and about 69% had witnessed bullying and harassment during their clinical placements. Other studies from societies that are similar to Western Europe, North American and Asia Pacific regions have also found evidence of maltreatment such as Australia,<sup>4 8</sup> New Zealand,<sup>9</sup> Ireland,<sup>10</sup> Argentina<sup>11</sup> and Japan.<sup>12 13</sup>

Maltreatment of medical trainees is not limited to Western countries.<sup>14–16</sup> Ahmer

*et al*<sup>17</sup> have reported pervasive and persistent tendencies for medical trainees in Pakistan to be subjected to 'disrespectful interactions', 'belittlement', 'undermining' and 'humiliation'. Drawing on the available literature, Coverdale *et al*<sup>18</sup> categorised the common forms of maltreatment directed towards medical trainees as verbal abuse or humiliation, non-sexual harassment, sexual harassment and forms of prejudice against sexual orientation or ethnicity.

There is a myriad of adverse impacts emerging as a result of trainees being subjected to maltreatment.<sup>18-19</sup> Schuchert *et al*<sup>20</sup> have shown a significant relationship between verbal abuse during medical training and lower levels of confidence, regardless of sex, race, age or levels of ability and temperament. Richman *et al*<sup>21</sup> studied the mental health impacts for trainees who were subjected to maltreatment. There appeared to be disconcerting tendencies for trainees suffering maltreatment to have 'psychopathological outcomes' in the forms of unrelenting affective emotions, resorting to 'self-medication' and dependency on mind altering substances.<sup>21-22</sup> This is consistent with well-known observations that there are high levels of stress and psychological distress among medical trainees,<sup>23</sup> which have also been suggested as playing a role in the high rate of suicides among physicians.<sup>24-25</sup> There is also an indication that medical trainees who were most distressed at the beginning of their training were likely to report continuing stress and distress in the subsequent course of their lives.<sup>26</sup> According to Miedema *et al*,<sup>27</sup> there are inherent mechanisms that perpetuate abusive behaviour in the medical culture, including working in what is perceived as a stressful environment. This allusion to a view that 'abuse begets abuse'<sup>28</sup> might imply the presence of a cycle of bullying within the medical profession.

In the Arab world, including Oman, evidence abounds that much emotional distress is present among medical trainees.<sup>29-32</sup> However, most of the studies are rife with conceptual limitations. Many of them have utilised assessment measures without local validity.<sup>33</sup> Also, the target population was preclinical students. Consequently, these generalisations cannot be applied to interns. Internship, in medical parlance, is the period in which new medical graduates practice in a hospital setting under supervision, prior to beginning a specialisation. In Oman, internship consists of 3-month to 4-month rotations during which each intern (resident) is rotated through the fields of general medicine, general surgery and either paediatrics or obstetrics and gynaecology. Following internship in Oman, further medical training is conducted under the auspices of the Oman Medical Specialty Board (<http://www.omsb.org>), a government body that is responsible for postgraduate clinical training. An integral part of its function is to oversee the well-being of trainees through services that include a specialised office and designated person to whom trainees can submit any grievance.

With evidence of adverse experiences among medical trainees or interns in other parts of the world and the fact that no data have been produced in Oman, the present study aimed to quantify mistreatment or abuse of Omani medical interns by seeking responses to their perceptions of abuse. Inter-related aims were to explore the level of perceived mistreatment among medical trainees according to gender, perpetrator and specialty, as well as determining the reasons for not reporting maltreatment to the concerned authority.

## MATERIALS AND METHODS

### Study population

The study was carried out among first year medical residents following completion of internship. During the study period 2009–2010, a total of 69 medical residents were invited to participate. The residents were approached during a research workshop conducted in May 2010. Each participant was asked to fill out a questionnaire about their experience and perceptions of mistreatment and abuse with reference to their internship. The participants were assured in writing that the survey would be anonymous, data gathered would be aggregated, their participation was voluntary and they could withdraw from the study at any time, without prejudice. In the event that undue distress was experienced by the participants while responding to sensitive questions, counselling support would be freely provided. The participants were asked not to discuss the questions among themselves in order to avoid peer influence.

### ASSESSMENT MEASURES

The Likert-type questionnaire was adapted from those developed by Sheehan *et al*,<sup>34</sup> Baldwin *et al*<sup>35</sup> and Uhari *et al*,<sup>36</sup> and focused on indexing 'verbal abuse', 'physical abuse or threats', 'academic abuse' and 'sexual harassment' (table 1). *Physical abuse* was defined as a threat that, if executed, would likely cause physical harm. Forms of physical abuse included slapping, pushing, hitting, kicking or having objects thrown at them. In addition, physical abuse also entailed being placed at unnecessary medical risk. *Academic abuse* was defined as being coerced into carrying out personal services unrelated to the expected role of interns. The concept of academic abuse also encapsulated instances in which interns were excluded from reasonable learning opportunities offered to others, or threatened with failure or poor evaluations for reasons unrelated to academic performance. *Sexual harassment* was defined as being subjected to jokes or comments against gender or body figure or being subjected to repeated leering or offered unwanted gifts with sexual underpinnings. The offer of private tutorial sessions or better grades in exchange for an illicit affair as well as inappropriate touching of a sexual nature also constituted examples of sexual harassment.

**Table 1** Medical trainee reporting different types of mistreatment according to sex

	♂+♀ (N=58)	♂ (N=28)	♀ (N=30)
Verbal abuse			
Shouted at you	29 (50%)	14 (50%)	15 (50%)
Belittled or humiliated you during meetings or rounds	32 (55.2%)	17 (60.7%)	15 (50%)
Spoke to you unrespectfully	27 (46.6%)	13 (46.4%)	14 (46.7%)
Physical abuse or threats			
Threatened you with physical harms	7 (12.1%)	3 (10.7%)	4 (13.3%)
Academic abuse			
You were asked to carry out some personal services unrelated to patient care or educational activities	17 (29.3%)	10 (35.7%)	7 (23.3%)
Your questions/queries were intentionally not answered	17 (29.3%)	11 (39.3%)	6 (20.0%)
You were forced to refer patients without providing reasonable cause for referral	30 (51.7%)	15 (53.6%)	15 (50%)
You were ask to take consent from very complicated cases	27 (46.6%)	16 (57.1%)	11 (36.7%)
You were threatened with failure or giving poor evaluations for reasons unrelated to your academic performance	15 (25.9%)	11 (39.3%)	4 (13.3%)
Sexual harassment			
Received jokes or comments against your gender (M/F)	9 (15.5%)	5 (17.9%)	4 (13.3%)
Received compliments or comments about your body or figure	7 (12.1%)	2 (7.1%)	5 (16.7%)
Faced with an offensive body language (eg, repeated leering and standing too close)	7 (12.1%)	1 (3.6%)	6 (20.0%)

♂, male; ♀, female.

A variety of sociodemographic data was sought from the participants, for example, age, sex, year of residency, marital status and current specialty. They were also given the opportunity to describe reasons for reporting or not reporting maltreatment using free text.

The questionnaire was delivered to each participant in a closed envelope which also contained a description of the study along with a written assurance of anonymity and confidentiality so that informed consent could be obtained. Participants were explicitly informed not to make any reference to their identity on the questionnaire. Written consent was not required, as the participants were informed that return of a completed questionnaire constituted a consent to participate. The right not to answer some questions was also explained.

## ANALYSIS

Descriptive statistics (raw counts and percentages) were calculated. The free narrative was assessed using thematic analysis. The study was approved by the local institutional review board and the Research and Ethics Committee of College of Medicine and Health Sciences, Sultan Qaboos University (MREC#382)

## RESULTS

The results are presented first as simple demographics of the sample and then in relation to the aims of the study. The response rate was 84.2% (58/69) of which 30 (51.7%) were women and 28 (48.3%) were men. Their ages ranged from 25 to 35 years (mean of 27.83 years and SD of 1.63 years).

### Experience of mistreatment according to gender

Table 1 shows experience of maltreatment according to gender. In 6 of 12 items eliciting maltreatment, men dominated. However, no statistical differences were found between genders on any one item. When each form of maltreatment was collapsed into 'verbal abuse', 'physical abuse or threats', 'academic abuse' and 'sexual harassment', the only category of statistical significance at the 95% confidence level was 'academic abuse' where the men reported higher levels of mistreatment ( $p \leq 0.004$ ).

### Experience of mistreatment according to perpetrator

As shown in table 2, consultants outshone others in perpetrating verbal abuse and physical abuse. They were also more likely to be guilty of academic abuse towards men, when interns ( $p=0.03$ ). Consultants and specialists together were implicated in academic abuse and sexual harassment more than the other groups encountered by the participants.

### Experience of mistreatment according to specialty

Three specialties (medicine, surgery and paediatrics) were scrutinised for variations in maltreatment to residents when they were interns. As shown in table 3, the data can be extrapolated in three ways. First, all indices of maltreatment were significantly higher during medical rotation than in paediatric or surgical rotations ( $p=0.005$ ). Maltreatment experienced in the paediatric rotation was second highest. Third, the highest type of maltreatment reported was verbal abuse (36.8%), closely followed by academic abuse (35%).

**Table 2** Medical trainees reporting different types of mistreatments according to sources/perpetrators

	Verbal abuse			Physical abuse			Academic abuse			Sexual harassment		
	♂	♀	Total	♂	♀	Total	♂	♀	Total	♂	♀	Total
Consultants	21 (75%)	17 (56.7%)	38 (65.5%)	4 (14.3%)	3 (10%)	7 (12.1%)	18 (64.3%)	11 (36.7%)	29 (50%)	4 (14.3%)	5 (16.7%)	9 (15.5%)
Specialists	9 (32.1%)	10 (33.3%)	19 (32.8%)	1 (3.6%)	2 (6.7%)	3 (5.2%)	16 (57.1%)	14 (46.7%)	30 (51.7%)	4 (14.3%)	6 (20%)	10 (17.2%)
Resident	4 (14.3%)	1 (3.3%)	5 (8.6%)	0	0	0	3 (10.7%)	4 (13.3%)	7 (12.1%)	2 (7.1%)	1 (3.3%)	3 (5.2%)
Nurses	6 (21.4%)	12 (40%)	18 (31%)	1 (3.6%)	4 (13.3%)	5 (8.6%)	7 (25%)	7 (23.3%)	14 (24.1%)	2 (7.1%)	0	2 (3.4%)
Patients/relatives	5 (17.9%)	7 (23.3%)	12 (20.7%)	1 (3.6%)	2 (6.7%)	3 (5.2%)	2 (7.1%)	2 (6.7%)	4 (6.9%)	1 (3.6%)	1 (3.3%)	2 (3.4%)
Others	1 (3.6%)	2 (6.7%)	3 (5.2%)	0	0	0	1 (3.6%)	0	1 (1.7%)	0	0	0

♂, male; ♀, female.

### Reasons for not reporting maltreatment

The major reason for not reporting maltreatment elicited from the free text responses was 'to avoid further trouble', as the residents believed that 'reporting could adversely affect evaluation and professional career'. Such behaviour, out of fear, could be seen as secondary abuse. Some respondents did not know how to deal with the problem or preferred to deal with the maltreatment themselves as they 'did not know whom to report to or how to make the complaint'. Seven respondents did not report the maltreatment because the perpetrator had 'apologised' to them. It was not uncommon to deny the experience as abuse 'at the time it happened' (table 4).

### DISCUSSION

To our knowledge, the present research is the first in Arab countries to describe four inter-related patterns in relation to maltreatment, from the experience of first year medical residents concerning their internship. These patterns included the gender of the victim, types of maltreatment, specialty rotation where maltreatment occurred and reasons for not reporting maltreatment. Although the intended population was small, the rate of response to the survey was high and the gender distribution of participants was fairly balanced. Most of the participants were undertaking a medical specialty and were in their late 20s. Pending further scrutiny, this could be viewed as a pilot study. However, the survey indicates alarming rates of maltreatment in the observed cohort. On the whole, the findings substantiate the views of other researchers that maltreatment is prevalent during medical training.<sup>6 7 20 37 38</sup>

One of the aims of this study was to examine whether there was a gender difference in perceived maltreatment. Maltreatment and sexual abuse (ie, abuse of a personal nature)<sup>39</sup> is a global pattern seen among working women,<sup>39</sup> including female doctors.<sup>40 41</sup> In the present study, the results suggest that there were no statistically significant differences per gender, although young female doctors were more likely to experience threats and sexual harassment. It is not clear why the present cohort appears to ostensibly differ from trends commonly observed elsewhere. It is possible that gender segregation, a common social prescription in the region, may have shielded women from being subjected to maltreatment. In traditional Omani society, gender segregation has been suggested to have been socioculturally sanctioned in order to enhance female safety.<sup>42</sup> It is also possible that, owing to the trajectory of modernity and female empowerment, trends may be shifting. There is an indication that the growing affluence of Oman is narrowing the traditional gender gap commonly found in patriarchal societies. Drawing on data from the Oman Ministry of Health, Alshishtawy<sup>43</sup> indicated that approximately 60% of the health workforce in Oman was female. Accordingly, 'women outnumbered men in all medical and health categories' and 'feminisation' of the



**Table 3** Medical trainee reporting mistreatment according to specialty

	All (n=58)	Medicine	Surgery	Paediatrics
Verbal abuse		32 (55.2%)	17 (29.3%)	15 (25.9%)
Shouted at you	29 (50%)	20 (62.5%)	11 (64.7%)	9 (60%)
Belittled or humiliated you during meetings or rounds	32 (55.2%)	21 (65.6%)	10 (58.8%)	13 (86.7%)
Spoke to you unrespectfully	27 (46.6%)	18 (56.2%)	8 (47.1%)	11 (73.3%)
Physical abuse or threats		11 (19%)	1 (1.7%)	3 (5.2%)
Threatened you with physical harms	7 (12.1%)	11 (100%)	1 (100%)	3 (100%)
Academic abuse		35 (60.3%)	17 (29%)	9 (15.5%)
You were asked to carry out some personal services unrelated to patient care or educational activities	17 (29.3%)	13 (37.1%)	7 (41.2%)	5 (55.6%)
Your questions/queries were intentionally not answered	17 (29.3%)	10 (28.6%)	9 (52.9%)	3 (33.3%)
You were forced to refer patients without providing reasonable cause for referral	30 (51.7%)	21 (60%)	11 (64.7%)	5 (55.6%)
You were asked to take consent from very complicated cases	27 (46.6%)	20 (57.1%)	10 (58.8%)	4 (44.4%)
You were threatened with failure or giving poor evaluations for reasons unrelated to your academic performance	15 (25.9%)	10 (28.6%)	4 (23.5%)	5 (55.6%)
Sexual harassment		10 (17.2%)	7 (12.1%)	4 (6.9%)
Received jokes or comments against your gender (M/F)	9 (15.5%)	5 (50%)	5 (71.4%)	2 (50%)
Received compliments or comments about your body or figure	7 (12.1%)	4 (40%)	3 (42.9%)	1 (25%)
Faced with an offensive body language (eg, repeated leering, standing too close)	7 (12.1%)	6 (60%)	1 (14.3%)	2 (50%)

medical/health sciences professions in Oman has reversed the male dominance of past years' (p.273). Therefore, the preponderance of women in the health-care sectors in Oman may play an instrumental role in

moderating the stereotypical picture of senior men abusing junior women.

The second inter-related aim of the present quest was to shed light on the perpetrators of maltreatment. The present descriptive data unequivocally implicated those in the top echelon, such as consultants and specialists, in committing academic abuse and sexual harassment. Studies elsewhere suggest that maltreatment often comes from non-medical staff, but according to Hinze<sup>44</sup> and Ahmer *et al*,<sup>17</sup> senior medical staff were not innocent. This current preliminary study suggests that hierarchy is strongly associated with the propensity to dispense abuse. It is possible that such occurrences stem from cultural patterning. While social institutions in Western Europe and North American countries have explicitly made corporal punishment, as retribution for academic misbehaviour, unacceptable (a view enshrined in legal and judicial systems), some reports have noted that occurrences of aggressive acts towards junior doctors still occur.<sup>45</sup> It is possible that senior members, traditional teachers or father figures demand filial obedience from students (in this case, junior doctors). However, notwithstanding such a view, it does appear that maltreatment of novices in the medical profession remains in many societies, including those that do not prescribe to the cultural patterning common in Oman.<sup>4 46</sup> In consequence, factors within the medical culture itself need to be explored in order to devise evidence-based interventions to mitigate the abuse of junior members by their seniors.

Knowing which types of abuse come from which sources enables educators to focus their resources on preventing maltreatment, although Cook *et al*<sup>47</sup> have suggested that there is no 'magic bullet' to mitigate the

**Table 4** Medical trainees' narrative for either reporting a reason or not reporting maltreatment

Reason/s for not reporting such abuse	%
1. I did not recognise the experience as an abuse at the time that it happened	N=19/58 (32.8%)
2. It was not significant to be reported to those in authority	N=19/58 (32.8%)
3. Reporting such abuse or mistreatment would not accomplish anything	N=24/58 (41.4%)
4. Reporting such mistreatment or abuse would become more troublesome than it was worth	N=25/58 (43.1%)
5. I dealt with the problem directly myself	N=13/58 (22.4%)
6. I did not know to whom I should report or how to complain	N=10/58 (17.2%)
7. I was afraid that reporting such abuse would adversely affect my evaluation or my professional career in future	N=24/58 (41.4%)
8. The abuser apologised to me	N=7/58 (12.1%)
9. I was afraid of not being believed or the problem would not be dealt with fairly	N=8/58 (13.8%)
10. I was afraid that the reporting would not be kept confidential	N=17/58 (29.3%)

prevailing maltreatment of medical trainees. A possible strategy, however, would be to institute mandatory courses for medical staff on awareness about the consequences of abuse and maltreatment. Medical schools and healthcare systems should also have inbuilt mechanisms where victims of abuse can air their grievances confidentially without consequently jeopardising their careers.

There are some obvious caveats to mention regarding this study. The data present residents' self-responses. Such a method of eliciting information has methodological deficits. Self-serving biases are well known in self-report studies.<sup>48</sup> It is also possible that recall bias could have contaminated the responses.<sup>49</sup> An integral part of recall bias is that when individuals perceive certain events as emotionally debilitating, the recourse is often to repress the memory of those events. Future investigations should have a built-in mechanism to reduce the likelihood of recall bias. Second, some insidious cultural factors are likely to factor in the present study. The Omani culture is known to be a culture of honour and 'shame', which means that many of life's maltreatments are 'concealed'.<sup>50</sup> Despite the anonymous nature of the present study, it is possible that incidences of sexual harassment or maltreatment were 'denied', resulting in spurious data. Notwithstanding the above-mentioned caveats, interesting issues have emerged from the present study that need to be followed up in a wider context. Finally, the lack of qualitative data in a phenomenological examination of perceived experience is likely to represent a major limitation of this study in particular in a population where such investigations have not yet been forthcoming. Therefore, in research eliciting perceived experiences on cross-cultural samples, the inclusion of qualitative research methodology such as interviews is likely to yield more fruitful results.<sup>51</sup> Such undertakings would lay the groundwork for more meaningful quantitative research instruments. Thereby, the present finding could be scrutinised with studies that have included some interviews or focus groups so that the participants' interpretations could be explored in depth.

Finally, the lack of qualitative data may represent a major limitation, particularly where such studies have not been undertaken before. Studies eliciting perceived experiences on cross-cultural samples benefit from the inclusion of qualitative research methods such as interviews or focus groups, which yield more in-depth findings,<sup>51</sup> and can lay the groundwork for developing more meaningful quantitative research instruments. If the present study had included some interviews or focus groups, so that the participants' interpretations could be explored in depth, a greater understanding of the phenomenon could have been explicated and compared with other studies of a similar nature.

## CONCLUSION

According to the literature, mistreatment of medical interns is emerging as a global challenge. To our

knowledge, this is the first study from the Arabian Gulf that explores the perception of maltreatment and abuse in a medical setting. Fifty-eight residents (84%) consented to participate in this survey concerning their experiences as interns. The ratio of men-to-women in this group, who were in their late 20s, was representative of the target population. Men responded that they had experienced higher levels of perceived mistreatment than women, particularly regarding academic abuse. In terms of the perpetrator, hierarchy appeared to dominate, as those who were commanding higher positions were more likely to commit maltreatment (such as academic abuse) and abuse (such as sexual harassment). Problems also appeared more widespread in the subspecialty of medicine. Reporting maltreatment was uncommon; thus, documented data do not exist to support evidence of abuse. In this study, therefore, only perceptions of maltreatment could be elicited, the reasons for not reporting being focused on fear of further trouble.

The findings from this pilot study should encourage further identification of factors that perpetuate maltreatment and abuse among medical interns. More extensive research is needed, however, to understand those factors in order to draw-up guidelines that will limit such problems and provide evidence-based interventions appropriate for the context of Oman.

**Acknowledgements** We thank all individuals who volunteered to participate in this study.

**Contributors** M-AS was the PI. M-AS, Y-AK and Y-AF conceived the idea of the study and were responsible for the design of the study and the acquisition of the data. GW, S-AA and H-AS provided input into the data analysis. M-AS, A-AM, GW and S-AA contributed to the interpretation of the results. The initial draft of the manuscript was prepared by M-AS and S-AA and then circulated repeatedly among all authors for critical revision. All authors helped to plan the study, evolve analysis plans, interpret data and critically revise successive drafts of the manuscript.

**Funding** This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None.

**Patient consent** Obtained.

**Ethics approval** Ethics approval was provided by the local institutional review board, Research and Ethics Committee of College of Medicine and Health Sciences, Sultan Qaboos University (MREC#382).

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data sharing statement** No additional data are available.

## REFERENCES

1. Borg MG. The extent and nature of bullying among primary and secondary schoolchildren. *Educ Res* 1999;41:137–53.
2. Richman JA, Rospenda KM, Nawyn SJ, *et al.* Sexual harassment and generalized workplace abuse among university employees: prevalence and mental health correlates. *Am J Public Health* 1999;89:358–63.
3. Maida AM, Vasquez A, Herskovic V, *et al.* A report on student abuse during medical training. *Med Teach* 2003;25:497–501.
4. White GE. Sexual harassment during medical training: the perceptions of medical students at a university medical school in Australia. *Med Educ* 2000;34:980–6.
5. Coverdale JH, Balon R, Roberts LW. Mistreatment of trainees: verbal abuse and other bullying behaviours. *Acad Psychiatry* 2009;33:269–73.

6. Daugherty SR, Baldwin DC Jr, Rowley BD. Learning, satisfaction, and mistreatment during medical internship: a national survey of working conditions. *JAMA* 1998;279:1194–9.
7. Quine L. Workplace bullying in junior doctors: questionnaire survey. *BMJ* 2002;324:878–9.
8. Askew DA, Schluter PJ, Dick ML, et al. Bullying in the Australian medical workforce: cross-sectional data from an Australian e-Cohort study. *Aust Health Rev* 2012;36:197–204.
9. Scott J, Blanshard C, Child S. Workplace bullying of junior doctors: cross-sectional questionnaire survey. *N Z Med J* 2008;121:10–14.
10. Finucane P, O'Dowd T. Working and training as an intern: a national survey of Irish interns. *Med Teach* 2005;27:107–13.
11. Mejía R, Diego A, Alemán M, et al. Perception of mistreatment during medical residency training. *Medicina (B Aires)* 2005;65:295–301.
12. Nagata-Kobayashi S, Maeno T, Yoshizu M, et al. Universal problems during residency: abuse and harassment. *Med Educ* 2009;43:628–36.
13. Nagata-Kobayashi S, Sekimoto M, Koyama H, et al. Medical student abuse during clinical clerkships in Japan. *J Gen Intern Med* 2006;21:212–18.
14. Yildirim D, Yildirim A, Timucin A. Mobbing behaviours encountered by nurse teaching staff. *Nurs Ethics* 2007;14:447–63.
15. Bairy KL, Thirumalaikolundusubramanian P, Sivagnanam G, et al. Bullying among trainee doctors in Southern India: a questionnaire study. *J Postgrad Med* 2007;53:87–90.
16. Imran N, Jawaid M, Haider II, et al. Bullying of junior doctors in Pakistan: a cross-sectional survey. *Singapore Med J* 2010;51:592–5.
17. Ahmer S, Yousafzai AW, Siddiqi M, et al. Bullying of trainee psychiatrists in Pakistan: a cross-sectional questionnaire survey. *Acad Psychiatry* 2009;33:335–9.
18. Dyrbye LN, Harper W, Moutier C, et al. A multi-institutional study exploring the impact of positive mental health on medical students' professionalism in an era of high burnout. *Acad Med* 2012;87:1024–31.
19. Dyrbye LN, Massie FS Jr, Eacker A, et al. Relationship between Burnout and Professional Conduct and Attitudes among US Medical Students. *JAMA* 2010;304:1173–80.
20. Schuchert MK. The relationship between verbal abuse of medical students and their confidence in their clinical abilities. *Acad Med* 1998;73:907–9.
21. Dyrbye LN, Thomas MR, Massie FS, et al. Burnout and suicidal ideation among U.S. medical students. *Ann Intern Med* 2008;149:334–41.
22. Bhan A. Substance abuse among medical professionals: a way of coping with job dissatisfaction and adverse work environments. *Indian J Med Sci* 2009;63:308–9.
23. Dyrbye LN, Thomas MR, Shanafelt TD. Medical student distress: causes, consequences, and proposed solutions. *Mayo Clin Proc* 2005;80:1613–22.
24. Aasland OG, Hem E, Haldorsen T, et al. Mortality among Norwegian doctors 1960–2000. *BMC Public Health* 2011;11:173.
25. Petersen MR, Burnett CA. The suicide mortality of working physicians and dentists. *Occup Med (Lond)* 2008;58:25–9.
26. Tartas M, Walkiewicz M, Majkowicz M, et al. Psychological factors determining success in a medical career: a 10-year longitudinal study. *Med Teach* 2011;33:e163–72.
27. Miedema B, MacIntyre L, Tatemichi S, et al. How the medical culture contributes to coworker-perpetrated harassment and abuse of family physicians. *Ann Fam Med* 2012;10:111–17.
28. Al-Adawi S, Al-Bahlani S. Domestic violence: 'What's love got to do with it?' *Sultan Qaboos Univ Med J* 2007;7:5–14.
29. Ahmed I, Banu H, Al-Fageer R, et al. Cognitive emotions: depression and anxiety in medical students and staff. *J Crit Care* 2009;24:e1–7.
30. Al-Saleh SA, Al-Madi EM, Al-Angari NS, et al. Survey of perceived stress-inducing problems among dental students, Saudi Arabia. *Saudi Dent J* 2010;22:83–8.
31. Al-Dabal BK, Koura MR, Rasheed P, et al. A comparative study of perceived stress among female medical and non-medical university students in Dammam, Saudi Arabia. *Sultan Qaboos Univ Med J* 2010;10:231–40.
32. Al-Busaidi Z, Bhargava K, Al-Ismaïly A, et al. Prevalence of depressive symptoms among university students in Oman. *Oman Med J* 2011;26:235–9.
33. Al-Adawi SS. Re: comparative study of perceived stress among female medical and non-medical university students in Dammam, Saudi Arabia. *Sultan Qaboos Univ Med J* 2010;10:410–11.
34. Sheehan KH, Sheehan DV, White K, et al. A pilot study of medical student 'abuse'. Student perceptions of mistreatment and misconduct in medical school. *JAMA* 1990;263:533–7.
35. Baldwin DC Jr, Daugherty SR, Eckenfels EJ. Student perceptions of mistreatment and harassment during medical school: a survey of ten United States schools. *West J Med* 1991;155:140–5.
36. Uhari M, Kokkonen J, Nuutinen M, et al. Medical student abuse: an international phenomenon. *JAMA* 1994;271:1049–51.
37. Einarsen S, Raknes BI. Harassment in the workplace and the victimization of men. *Violence Vict* 1997;12:247–63.
38. Richman JA, Flaherty JA, Rospenda KM, et al. Mental health consequences and correlates of reported medical student abuse. *JAMA* 1992;267:692–4.
39. Eloul L, Ambusaidi A, Al-Adawi S. Silent epidemic of depression in women in the Middle East and North Africa region: emerging tribulation or fallacy? *Sultan Qaboos Univ Med J* 2009;9:5–15.
40. Nora LM, McLaughlin MA, Fosson SE, et al. Gender discrimination and sexual harassment in medical education: perspectives gained by a 14-school study. *Acad Med* 2002;77:1226–34.
41. Larsson C, Hensing G, Allbeck P. Sexual and gender-related harassment in medical education and research training: results from a Swedish survey. *Med Educ* 2003;37:39–50.
42. Wikan U. *Behind the veil in Arabia: women in Oman*. Chicago: University of Chicago Press, 1991.
43. Alshishtawy M. Re: Afghanistan and Oman: personal reflections on a profound contrast. *Sultan Qaboos Univ Med J* 2010;10:272–5.
44. Hinz SW. 'Am I being over-sensitive?' Women's experience of sexual harassment during medical training. *Health (London)* 2004;8:101–27.
45. Madhiwalla N, Roy N. Assaults on public hospital staff by patients and their relatives: an inquiry. *Indian J Med Ethics* 2006;3:51–4.
46. Moscarello R, Margittai KJ, Rossi M. Differences in abuse reported by female and male Canadian medical students. *Can Med Assoc J* 1994;150:357–63.
47. Cook DJ, Liutkus JF, Risdon CL, et al. Residents' experiences of abuse, discrimination and sexual harassment during residency training. McMaster University Residency Training Programs. *Can Med Assoc J* 1996;154:1657–65.
48. Mezulis AH, Abramson LY, Hyde JS, et al. Is there a universal positivity bias in attributions? A meta-analytic review of individual, developmental, and cultural differences in the self-serving attributional bias. *Psychol Bull* 2004;130:711–47.
49. Coughlin SS. Recall bias in epidemiologic studies. *J Clin Epidemiol* 1990;43:87–91.
50. Dwairy M, Van Sickle TD. Western psychotherapy in traditional Arabic societies. *Clin Psychol Rev* 1996;16:231–49.
51. Al-Busaidi ZQ. Qualitative research and its uses in health care. *Sultan Qaboos Univ Med J* 2008;8:11–9.